

**HYDROLOGIC SOIL - COVER COMPLEXES****3. Runoff**

The Soil-Cover-Complex method is used to estimate runoff from rainfall. A combination of the hydrologic soil group (soil) and the land use and treatment class (cover) is used to determine the hydrologic soil-cover-complex number or runoff curve number (CN). Several guidelines for the determination of runoff curve numbers are as follows:

Condition or Rotation. Ratings as to "Poor" or "Good" are based largely on the proportion of dense vegetation in the rotation. "Good" will generally be used for cultivated land in Minnesota except where land is very droughty or severely abused.

Pasture will be considered "poor" if it is heavily grazed and has no mulch. "Fair" pasture has between 50 and 75% of the area with plant cover and is moderately grazed. "Good" pasture is lightly grazed and has more than 75% plant cover.

"Poor" woods (farm) are heavily grazed and have no litter or new young growth. "Good" woods are protected from grazing and have good undergrowth. "Fair" is in between.

Commercial forests will be rated according to Forest Service procedures as covered in the National Engineering Handbook – Part 630 – Hydrology.

Practice. Straight row farming on land slopes of 1 to 2% percent which is generally across the slope may be considered the same as contoured. Straight row farming on land of less than 1% may be considered the same as contoured and terraced.

Swamps. For swamps and wetlands, if the site has open water year round such that at least 1/3 of the wetland is water, use RCN = 85 regardless of soil type. If the swamp has no open water and the calculations are for a 25-year frequency or shorter, use RCN=78 regardless of soil type. Exclude swamps from the drainage area if they are land-locked.

Temporary Measures. Composite curve numbers to use for the design of temporary measures during grading and construction should be computed based on the degree of development (impervious area percentage) and the curve numbers for the newly graded pervious areas.

Good Judgment must be used for borderline cases and for those cases not covered on this sheet.